

## REMARKS

Upon entry of the present amendment, claims 1-26 are pending in the application. Claims 4, 5, and 6 have been amended as discussed below. New claim 26 adds no new matter as support for this claim can be found in the specification and claims 1, 6, and 19.

The specification has been amended to address the Examiner's concerns with regard to the use of trademarks.

**1. Rejection of claims 1-5, 10, 11, and 14-25 under Judicially Created Doctrine of Obviousness-type Double Patenting.**

Claims 1-5, 10, 11, and 14-25 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-23 of copending U.S. Patent Application Serial No. 10/510,993 and claims 13-18 of copending U.S. Patent Application Serial No. 10/512,130. Since neither the present claims nor the claims of any of the copending applications have been patented, there is no way that double patenting can be determined. Specifically, nothing has been patented and there is no way to compare the final claims until one of the cases has been patented and the other claims are otherwise allowable. Hence, Applicants respectfully request that the Examiner withdraw the obviousness double patenting rejections until the claims are in final form and otherwise in condition for allowance and the case over which double patenting is alleged is allowed. Until such time, there is no double patenting and no way to determine double patenting.

As part of the section of the Office Action discussing the double patenting rejection and related issues the Examiner referred to Application Serial No. 10/639,723 (paragraph 5 on page 3 of Office Action dated January 11, 2007) as being "discussed above." This application number is not discussed in either paragraph 3 or 4 on page 3 of specified Office Action. Applicants respectfully request clarification.

2. Rejection of Claims 4-6 under 35 U.S.C. §112, second paragraph

Claims 4-6 have been rejected for allegedly having insufficient antecedent basis for the phrase "at least one polymer". Claims 4-6 have been amended to recite "at least one swellable polymer", a phrase that can be found in claim 1. Reconsideration and removal of the rejection of claims 4-6 is respectfully requested in light of this amendment.

3. Rejection of claims 1-5, 14-18, 22-25 under 35 U.S.C. §103(a) as being unpatentable over by Roberts et al., U.S. 5,118,727, hereafter "Roberts" or "727".

The PTO states:

"Prior art to Roberts et al. discloses stable mixtures of colloidal silica, which is metal modified, and a film-forming polymer. The binder compositions include silica aquasols, which are metal, modified, and deionized to a pH of 2.5 to 7.0 and water-soluble polymer such as polyvinyl alcohol (abstract). The silica aquasol has a average particle size of 3 to 150 nm and may be used in amounts of 5-40% by wt. The compositions may further include additives for purposes known in the binder art, such as wetting agents, plasticizers such as polyethylene glycol or Glycerine, antifreeze such as ethylene glycol etc. (col. 4, lines 51-60)."

In making the rejection, Examiner relies on Roberts to teach binder compositions that include a metal modified deionized colloidal silica aquasol and a water soluble polymer such as poly (vinyl alcohol) (Abstract). Furthermore, Examiner relies on Roberts to teach that additives, such as polyethylene glycol, glycerine or ethylene glycol (col. 4, lines 56-58) can be added to these compositions. Examiner states that these additives render Applicants' invention obvious as such additives are amphiphiles (Office Action dated January 11, 2007 page 6). Applicants greatly appreciate the detailed basis of rejection but must respectfully disagree.

An amphiphile is a molecule that is both hydrophobic and hydrophilic in nature. Specifically, an amphiphile is usually a molecule having a polar group, such as a hydroxyl, attached to a non-polar hydrocarbon chain. Applicants' invention requires amphiphiles to be either monoalcohols having from 3-6 carbon atoms or aliphatic

polyols, especially diols, having from 3-12 carbon atoms. Specifically, Applicants' require the use of propanol, isopropanol, butanol or isobutanol.

The prior art teaches that additives can be added to binder compositions. Specifically, Roberts teaches that polyethylene glycol, glycerine and ethylene glycol can be used as such additives. However, these additives are not classified as amphiphiles, as each is known to one of ordinary skill in the art as being hydrophilic.

The additives required by the prior art of Roberts either do not contain long enough hydrocarbon chains or have too many hydroxyl groups in proportion to the hydrocarbon component to render them amphiphilic. For example, ethylene glycol, which is an additive specified by Roberts, contains carbon atoms and hydroxide ions in a 1:1 ratio. This is unlike butanol, an amphiphilic constituent of Applicants' invention, which contains carbon atoms and a hydroxyl group in a 4:1 ratio.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ 2d 1438 (Fed. Cir. 1991).

In this case, the cited prior art fails to provide a *prima facie* case of obviousness for too reasons. First, Roberts fails to disclose or suggest a required limitation of independent claim 1, i.e., at least one amphiphile. Second, Roberts fails to provide any suggestion to modify its disclosed compositions to include an amphiphile. Accordingly, Roberts does not provide a *prima facie* case of obviousness.

Reconsideration and withdrawal of the rejection is respectfully requested.

#### **4. Allowable Subject Matter**

Claims 7-9, 12 and 13 are rejected as being dependent upon a rejected base claim. However, the Examiner has indicated that these claims would be allowable if

rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants appreciate the Examiner's indication of allowability but respectfully assert, in light of the remarks provided herein, that all of the pending claims are allowable.

## CONCLUSION

Applicant(s) respectfully submit that the Application and pending claims are patentable in view of the foregoing amendments and/or remarks. A Notice of Allowance is respectfully requested. As always, the Examiner is encouraged to contact the Undersigned by telephone if direct conversation would be helpful.

Respectfully Submitted,

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